ACUTE AXIAL TORSION OF THE UTERUS

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THE uterus in its normal state has little motility and is firmly held in place by the broad ligaments and the uterosacral ligaments. These widely distributed supports resist any tendency to torsion. But a large heavy fibroid of the subperitoneal type attached near the fundus of the uterus and well above the pelvic brim may rotate and exert traction on the uterus. It has inertia and a wide field of movement, and the more spherical its shape, the more easily it can rotate.

In 1909, Piquand and Lemeland[1] collected and reported 37 cases. Vautrin[2] added two the following year. By 1926, Hitzanidés[3, 10] had brought the total number of cases to 86. In 1932, Pavlos,[4] of Alexandria, added 15, bringing the total to 101. Thirty-two additional cases have been excluded because the torsion of the uterus was secondary to torsion of a fibroma with a pedicle and not due to the weight of the fibroma itself. With sessile fibromata the torsion of the uterus occurs at the same time as that of the fibroma.

These cases are of two types, acute and chronic. In the chronic cases there is a history of a long period of lower abdominal distress. In the acute cases there is sudden sharp pain which increases in intensity. In both types there is a round midline swelling having its origin in the pelvis and extending toward the level of the umbilicus. The point of torsion of the uterus is fixed, occurring as a rule at the level of the uterine isthmus. In three cases only the point of torsion was higher at the level of the insertion of the fallopian tubes.[5] The elongation of the uterine isthmus may be so pronounced as to reduce the region just above the cervico-corporeal junction to a cord and cause venous obliteration and edematous infiltration. Persistent torsion has resulted in distention of the uterus by blood or pus, and widespread hemorrhagic infiltration in pelvic and subperitoneal tissues. Engorgement may spread to tubes and ovaries with the formation of peritoneal adhesions. With further rotation the arteries may become occluded causing necrosis of tissue.

Diagnosis.—The condition of axial torsion of the uterus is rarely diagnosed clinically, the abdominal tenderness and rigidity suggesting ovarian cyst with twisted pedicle. According to Gordon-Watson,[6] two objections to this diagnosis are the solid consistency of the tumor and its apparent continuity with the cervix. Failure to pass a uterine sound may be of some diagnostic aid. In women still able to bear children cessation of the catamenia with acute abdominal pain and the presence of a smooth, solid, abdominal tumor continuous with the cervix point to axial torsion of the

uterus. Other symptoms may be present. In a puzzling case reported by Walker,[7] there was diffuse pain down the front of both thighs, although none of the three upper lumbar nerves supplying the area affected enters the pelvis.

Etiology.—The etiology of axial torsion of the uterus is unknown. Causes given for ovarian cyst with twisted pedicle do not apply in these cases. Changes in volume of the bladder or rectum will not cause rotation. Vautrin[8] suggests that peristaltic movements of the sigmoid may be the cause. Changes due to pregnancy play an important rôle, but the phenomenon is more common in nulliparae. Courty[9] points out that in all the series only five women were under 40 years of age: in Schultz's cases the patients were 25 and 27 years of age, respectively; Freund's patient was 21; Loblein's, 25; and Wörtz's, 19. Rokitansky, Kocberle, and Lindig[11] favor Sellheim's theory that torsion of the uterus is concomitant with torsion of the body. In one case the woman was a reaper by occupation and the repeated spiral movement of reaping with the sickle was considered the cause of the torsion. Hitzanidés[10, 12] believes that the weight, volume, and point of implantation of the tumor and the effect of gravity are sufficient factors to cause the torsion. The body of the uterus with a large myoma of ovoid shape may by the weight and traction of the fibroid be revolved on the isthmus and cervix.

Treatment.—Patients seek relief when the torsion causes severe abdominal pain. The extent of torsion varies between 200 and 360°, although Michalitz, Wertheim, and Homans[13] report a uterus twisted one and one-half times upon its isthmus. The treatment in women past the child-bearing period or in cases where adhesions from an old pelvic inflammatory process are present is total or subtotal hysterectomy, preferably the latter, because it is simple, rapid, less hemorrhagic and more aseptic. Cases in which complications of salpingitis, oöphoritis, or peritonitis arise present a problem. Some surgeons have successfully postponed operation until the patient had recovered from the shock of the acute torsion. Courty,[14] however, states that the best way to alleviate pain is to correct the torsion immediately. In cases in which the women may still bear children, enucleation of the myoma and detorsion of the uterus are indicated.

CASE REPORT (Case No. 30921).—L. B., aged 32, female, married, mill-operator, entered the Truesdale Hospital January 4, 1934, complaining of abdominal distress, gaseous distention, and eructations, which had persisted for two weeks. Two days prior to admission the pain in the lower abdomen became more severe, most intense in the midline and spreading to each lower quadrant. The attacks were of irregular onset and not related to the intake of food. The appetite remained unimpaired. There was no nausea and bowel movements were normal.

The menstrual history was normal. The last period, however, ended 35 days before admission. Two days before entry there was a scant show which became free-flowing on the day of admission. The patient had been married two years and had never been pregnant. The past and family history was negative.

Physical examination revealed a well-developed and well-nourished woman in mod-

erate abdominal distress. Temperature 99.8°, pulse 100 and respirations 20. The heart and lungs were normal. Blood pressure 120/70. A large, tender, slightly irregular mass could be felt in the right lower quadrant of the abdomen extending to the midline. Vaginal examination revealed a mass to the right of the uterus. The uterus was apparently of normal size.

The urine examination was negative. Erythrocytes, 4,530,000; leukocytes, 11,800; and hemoglobin, 90 per cent (Tallquist). The differential blood count and smear were normal. The non-protein nitrogen was 28.5 mg. and the blood sugar 111 mg. per 100 cc. The Kahn examination was negative.

A preliminary diagnosis of ovarian cyst with twisted pedicle was made. Ectopic pregnancy seemed less likely but was considered.

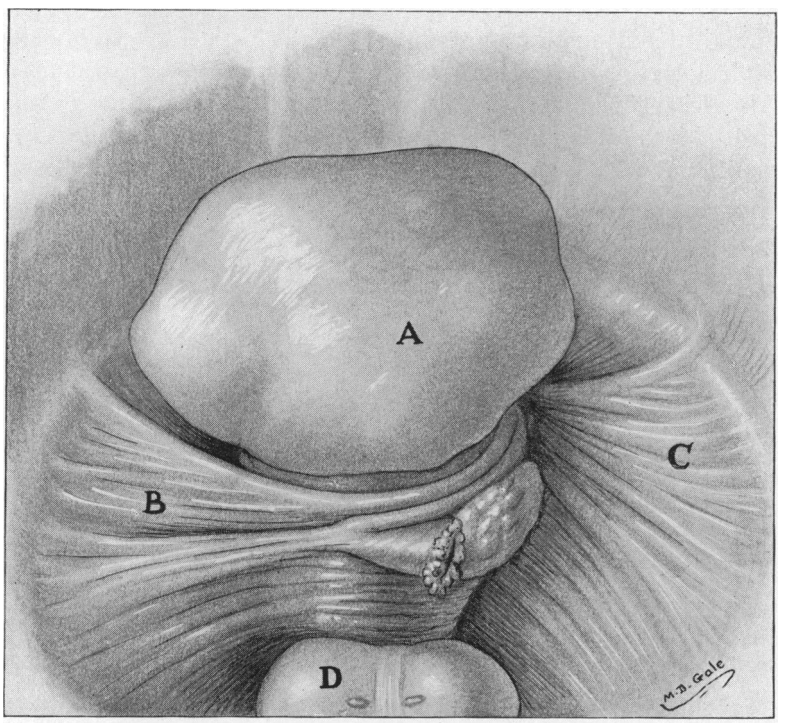

FIG. 1.—Posterior view of uterus. (A) Fibroid situated upon fundus of uterus. (B) Left broad ligament (wrapped around body of uterus). (C) Right broad ligament. (D) Rectum.

The following day under avertin anesthesia laparotomy was done through a lower midline incision. The peritoneal cavity contained a small amount of free blood. Exploration of the pelvis revealed an asymmetrical, nodular fibroid the size of a grapefruit situated upon the fundus of the uterus. The uterus itself was slightly larger and softer than normal and was twisted upon itself a complete turn of 360° at a point just above the internal os. The adnexa appeared normal. Except for its slightly congested appearance, the uterus seemed to show no serious interference in its blood supply. The torsion was easily corrected and with detorsion the color of the uterus rapidly changed to normal. Myomectomy was then done without opening the uterine cavity, and the musculature of the uterine fundus closed with two layers of catgut sutures. Incidental appendectomy was done and the abdomen closed in layers without drainage.

The patient made an excellent postoperative recovery. Convalescence, however, was somewhat prolonged by a right femoral phlebitis, which developed on the fourth postoperative day, and by a pulmonary infarction which occurred on the thirteenth postoperative day. These complications yielded satisfactorily to supportive treatment and the patient left the hospital recovered 30 days after admission.

Comment.—This case is typical of many reported in the literature. The uterus had undergone dextro-rotation through 360°, the torsion occurring in the region of the isthmus, which in this instance was not thinned out. In search for a site in the abdomen best suited to its shape, the myoma as it grew on the fundus rotated, pulling the uterus after it. The process of torsion was rapid after the fibroid had become large enough to exert traction on the uterus and cause symptoms of abdominal distress and pain. Torsion had not progressed to the extent of causing deep congestion or gangrenous changes in uterus or adnexa, although the uterus was somewhat congested. Myomectomy with detorsion sufficed to secure cessation of symptoms, and in view of the patient's youth more radical measures were not considered advisable.

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